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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR        | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|-----------------------------|---------------------|------------------|
| 10/552,454   | 10/07/2005  | Yutaka Ikeda                | 1248-0818PUS1       | 2348             |
| 2292 7590 09/17/2008<br>BIRCH STEWART KOLASCH & BIRCH<br>PO BOX 747<br>FALLS CHURCH, VA 22040-0747 |             |                             |                     |                  |
| EXAMINER<br>PATEL, DHAVAL V  |             |                             |                     |                  |
| ART UNIT<br>2611   |             | PAPER NUMBER                |                     |                  |
| NOTIFICATION DATE<br>09/17/2008  |             | DELIVERY MODE<br>ELECTRONIC |                     |                  |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

# Office Action Summary

**Application No.**

10/552,454

**Applicant(s)**

IKEDA ET AL.

**Examiner**

DHAVAL PATEL

**Art Unit**

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 44-101(1-43 are cancelled) is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 44-101 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/S508)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Election/Restrictions***

1. This application contains claims directed to the following patentably distinct species:

Species 1: Claim 44 and dependent claims from claim 44 (method) and 88 (program) corresponds to a waveform shaping method comprising in which waveform shaping is carried out by making that pulse width of the input signal which is recognized from the sampling signal closer to a predetermined pulse width, irrespective of the pulse width.

Species 2: Claim 48 and dependent claims from claim 48 (method) and 89(program) corresponds to a waveform shaping is carried out by shortening, by a predetermined value, that pulse width of the input signal which is recognized from the sampling signal, irrespective of the pulse width.

Species 3: Claim 51 and dependent claims from claim 51(method) and 90(program) corresponds to waveform shaping is carried out by lengthening, by a predetermined value, that pulse width of the input signal which is recognized from the sampling signal, irrespective of the pulse width.

Species 4: Claim 54 and dependent claims from claim 54 (method) and 91 (program) corresponds to, waveform shaping is carried out by making that pulse

width of the input signal which is recognized from the sampling signal closer to a minimum pulse width of the input signal in the sampling signal, irrespective of the pulse width.

Species 5: Claim 55 and dependent claims from claim 55 (method) and 92 (program) corresponds to waveform shaping is carried out by making that pulse width of the input signal which is recognized from the sampling signal equal to or smaller than a minimum pulse width of the input signal in the sampling signal, irrespective of the pulse width.

Species 6: Claim 56 and dependent claims from claim 56 (method) and 93 (program) corresponds to waveform shaping is carried out by making that pulse width of the input signal which is recognized from the sampling signal equal to an inverse number of the sampling clock frequency, irrespective of the pulse width.

Species 7: Claim 57 and dependent claims from claim 57 (method) and 94 (program) corresponds to, the waveform shaping step being such that (I) a no-pulse period, which is recognized from the sampling signal, is detected, and (II) if the no-pulse period is less than a setting value, waveform shaping is so carried out, irrespective of a pulse width, as to modify the no-pulse period to the setting value by (i) shifting a position of a pulse adjacent to the no-pulse period or (ii) shaping the pulse.

Species 8: Claims 62, and dependent claims from claim 62 (method) , 95 and 96 (program) corresponds to, the waveform shaping step being such that (I) a pulse width recognized from the sampling signal is compared with (i) a first reference value, and (ii) a second reference value which is larger than the first reference value by a constant value, and (II) if the pulse width is equal to or larger than the second reference value, the pulse width is reduced by the constant value, irrespective of the pulse width.

Species 9: Claim 63 and dependent claims from claim 63 corresponds to, the waveform shaping step being such that (I) a pulse width recognized from the sampling signal is compared with (i) a first reference value, and (ii) a second reference value which is larger than the first reference value by a constant value, and (II) if the pulse width is larger than the first reference value but less than the second reference value, the pulse width is reduced, irrespective of the pulse width, so that the pulse width is made as close to the first reference value as possible.

Species 10: Claim 64 and dependent claims from claim 64(method) and 97(program) corresponds to, the waveform shaping step being such that (I) a pulse width recognized from the sampling signal is compared with (i) a first reference value, and (ii) a second reference value which is larger than the first

reference value by a constant value, and (II) the pulse width is not reduced if the pulse width is equal to or less than the first reference value.

Species 11: Claim 71 and dependent claims from claim 71(method) and 98 (program) corresponds to, the waveform shaping step being such that (I) a pulse interval recognized from the sampling signal is compared with an interval reference value, and (II) if the pulse interval is less than the interval reference value, the pulse interval is lengthened, irrespective of a pulse width, by (i) shifting a position of a pulse adjacent to the no-pulse period or (ii) shaping the pulse so that the pulse interval is made as close to the interval reference value as possible, the pulse interval being a width of a period having no pulse.

Species 12: Claim 81 and dependent claims from claim 81(method) and 99(program) corresponds to the waveform shaping step being such that (I) a width of the pulse in the input signal is compared with a reference range determined in accordance with the width of the pulse, and (II) if the width of the pulse is out of the reference range, waveform shaping is so carried out as to make the width of the pulse fall within the reference range.

Species 13: Claim 84 and dependent claims from claim 84 (method) and 100 (program) corresponds to the waveform shaping means compares a first symbol count with a first reference value and a value which is a constant value larger

than the first reference value, where (i) the first symbol count is a number of symbols in a first symbol string having been replaced for a pulse-existing period, and (ii) a second symbol count is a number of symbols in a second symbol string having been replaced for a no-pulse period adjacent to the pulse-existing period, and if the first symbol count is equal to or more than the second reference value, the waveform shaping means partially replaces the first symbol string with the second symbol string by the constant value, irrespective of a pulse width of the pulse signal generated through the signal processing, so as to shorten the pulse-existing period.

Species 14: Claim 85 and dependent claims from claim 85 (method) and 101 (program) corresponds to the waveform shaping means compares a second symbol count with an interval reference value, where (i) the first symbol count is a number of symbols in a first symbol string having been replaced for a pulse-existing period, and (ii) a second symbol count is a number of symbols in a second symbol string having been replaced for a no-pulse period adjacent to the pulse-existing period, and if the second symbol count is less than the interval reference value, the waveform shaping means partially replaces the first symbol string with the second symbol string in such a manner that the second symbol count is equal to the interval reference value, irrespective of a pulse width of the pulse signal generated through the signal processing, so as to lengthen the no-pulse period.

The election of the species may be made with or without traverse. To preserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the election of species requirement, the election shall be treated as an election without traverse. Traversal must be presented at the time of election in order to be considered timely. Failure to timely traverse the requirement will result in the loss of right to petition under 37 CFR 1.144. If claims are added after the election, applicant must indicate which of these claims are readable on the elected species.

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the species unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other species.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitations of an allowable generic claim as provided by 37 CFR 1.141.

2. A telephone call was made to James Larson on 9/10/2008 to request an oral election to the above restriction requirement, but did not result in an election being made.



Any inquiry concerning this communication or earlier communications from the examiner should be directed to DHAVAL PATEL whose telephone number is (571)270-1818. The examiner can normally be reached on M-F 8:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shuwang Liu can be reached on 571-272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dhaval Patel/  
Examiner, Art Unit 2611  
8/10/2008  
/Shuwang Liu/  
Supervisory Patent Examiner, Art Unit 2611